Applicant(s): Altman et al.

U.S. National Stage of PCT/US2004/037793 International Filing Date: 12 November 2004

For: BIOTIN-FACILITATED TRANSPORT IN GRAM NEGATIVE BACTERIA

## **Amendments to the Claims**

This listing of claims replaces all prior versions, and listings, of claims in the aboveidentified application:

## **Listing of Claims**

- 1. (Original) A method for introducing a compound into a Gram negative bacterial cell, the method comprising contacting the cell with a biotinylated compound, wherein the compound comprises a peptide or a peptidomimetic.
- 2. (Currently Amended) A The method of claim 1 wherein the contact is effective to deliver for introducing a compound into a Gram negative bacterial cell, the method comprising contacting the cell with a biotinylated compound to effect delivery of the compound into the cytosol of the cell, wherein the compound comprises a peptide or a peptidomimetic.
- 3. (Original) A method for introducing a compound into a Gram negative bacterial cell, the method comprising contacting the cell, in the absence of a membrane-permeabilizing agent, with a biotinylated compound.
- 4. (Original) The method of claim 3 wherein the contact is effective to deliver the compound into the cytosol of the cell.
- 5. (Original) A method for identifying a compound having antimicrobial activity comprising: contacting a Gram negative bacterial cell with biotinylated compound to cause uptake of the biotinylated compound by the cell;

determining whether the biotinylated compound has an antimicrobial effect on the cell.

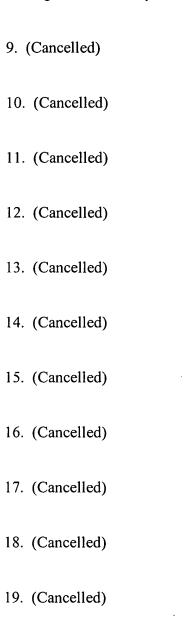
6. (Currently Amended) The method of any one of claims 1, 2 or 5 claim 1 or 5 wherein the cell is contacted with the biotinylated compound in the absence of a membrane-permeabilizing agent.

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- 7. (Currently Amended) The method of any of claims 3 to 6 claims 3 or 5 wherein the compound comprises a peptide or a peptidomimetic.
- 8. (Currently Amended) The method of any of the preceding claims 1, 3 or 5 further comprising linking a biotin moiety to the compound to yield the biotinylated compound.



20. (Cancelled)

**Preliminary Amendment** 

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21. (Currently Amended) The method of any of claims 1, 2, or 7 to 20 claim 1 wherein the peptide or peptidomimetic is conjugated to a bioactive compound.

- 22. (Currently Amended) The method of any of the preceding claims 1, 3 or 5 wherein the Gram negative bacterial cell is a cell of the genus *Escherichia*, *Salmonella*, or *Pseudomonas*.
- 23. (Currently Amended) The method of any of the preceding claims claim 22 wherein the Gram negative bacterial cell is an *E. coli* cell, a *S. typhimurium* cell, or a *P. aeruginosa* cell.
- 24. (Currently Amended) The method of any of the preceding claims 1, 3 or 5 wherein the Gram negative bacterial cell comprises a biotin transporter.
- 25. (Original) The method of claim 24 where the biotin transporter comprises a *birB/bioP* transporter.
- 26. (Currently Amended) The method of any of the preceding claims 1, 3 or 5 wherein the compound comprises a therapeutic, diagnostic or imaging agent.
- 27. (Currently Amended) The method of any of the preceding claim 26 wherein the compound further comprises a targeting moiety that specifically targets a Gram negative bacterial cell.
- 28. (Original) The method of claim 27 wherein the targeting moiety comprises a receptor ligand or an antibody or fragment thereof.
- 29. (Currently Amended) The method of any of the preceding claims claim 26 wherein the compound comprises an antibiotic.
- 30. (Cancelled)

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31. (Cancelled)

32. (Currently Amended) The method of any of the preceding claims 1, 3 or 5 wherein the Gram

negative bacterial cell is a pathogen.

33. (Currently Amended) The method of any of the preceding claims 1, 3 or 5 wherein the

compound, when introduced into the cell, inhibits the growth of the cell.

34. (Currently Amended) The method of any of the preceding claims 1, 3 or 5 wherein the

compound, when introduced into the cell, causes the death of the cell.

35. (Currently Amended) The method of any of the preceding-claims 1, 3 or 5 performed in the

absence of calcium chloride.

36. (Currently Amended) A compound identified by the method for identifying a compound

having antimicrobial activity as in any of claims 5 through 35 claim 5.

37. (Original) A pharmaceutical composition comprising an effective amount of the compound

of claim 36 and a pharmaceutically acceptable carrier.

38. (Original) A method for the treatment of a disease treatable by the compound of claim 36,

the method comprising administering to a patient in need thereof a therapeutically effective

amount of said compound.

39. (Cancelled)

40. (Cancelled)

41. (Cancelled)

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42. (Currently Amended) The method of any of claims 38 to 41 claim 38 wherein the disease is selected from the group consisting of enteritis, septicaemia, meningitis, enteric fever, pneumonia, epiglottitis, cellulitis, diarrhea and a sexually transmitted disease.